Perle IDS-105G (XT)

Unmanaged 10/100/1000 Ethernet Switches

Installation Guide

P/N 5500340-10

Overview

This document contains instructions necessary for the installation and operation of the Perle IDS-105G Ethernet switch. This Ethernet switch can be ordered as a 5-port RJ-45 switch or as a 5-port RJ-45 switch with either one fiber port (SC or ST) or up to two SFP transceiver ports. The fiber port can be either single mode (SM) or multimode (MM) depending on the model selected and they can operate over different wavelengths and distances. The SPF transceiver ports support SFP's supplied by Perle, Cisco or other manufacturers of MSA complaint SFP modules.

Visit the Perle website for the most up to date installation guides, models and specifications. ***http://www.perle.com/***

Model	Port 1-5	Port 6	Port 7
IDS-105G	***TP (RJ-45)***	***None***	***None***
IDS-105G-xxxxxxxx	***TP (RJ-45)***	***Fiber port***	***Not applicable***
IDS-105G-SFP	***TP (RJ-45)***	***SFP transceiver port ****	***Not applicable***
IDS-105G-DSFP	***TP (RJ-45)***	***SFP transceiver port ****	***SFP transceiver port****
IDS-105G-XT (Industrial Temperature)	***TP (RJ-45)***	***None***	***None***
IDS-105G-SFP-XT	***TP (RJ-45)***	***SFP transceiver port****	***Not applicable***
IDS-105G-DSFP-XT	***TP (RJ-45)***	***SFP transceiver port****	***SFP transceiver port****
IDS-105G-xxxxxxxx-XT (Industrial Temperature	***TP (RJ-45)***	***Fiber port***	***Not applicable***

Note: xxxxxxxx indicates models numbers for this product line.
TP = twisted pair
**** fiber characteristics are determined by the SFP inserted***

Features

- 10/100/1000Base-T, 1000Base-X, SC/ST/SFP fiber ports, multi/single mode
- Pluggable SFP transceiver ports
- IEEE 802.3/802.3u/802.3x
- 1000Base-SX /LX/LH /BX-U/BX-D /EX /ZX
- 10/100/1000Base-T, Full/Half duplex, Auto-negotiation on copper ports
- Redundant DC power inputs
- Rugged high-strength case
- Industrial temperature models
- Din-rail or wall/panel mounting

Note – In this guide the various models will be referred to as the IDS-105G

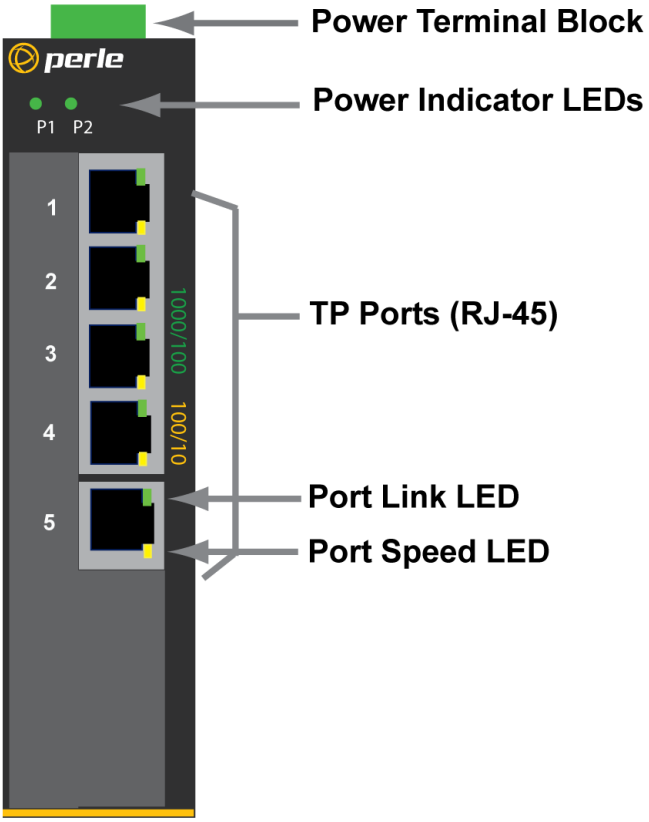
Getting to know your IDS-105G Switch

Package Contents:

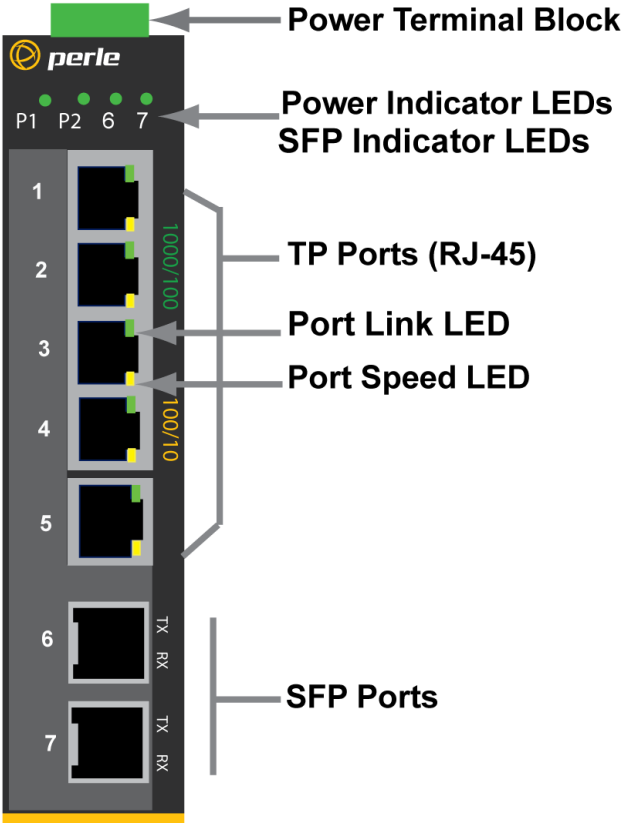
- IDS-105G
- DIN-rail mounting clip (pre-installed on the unit)
- This guide

Note – optional panel/wall mounting kits may be ordered

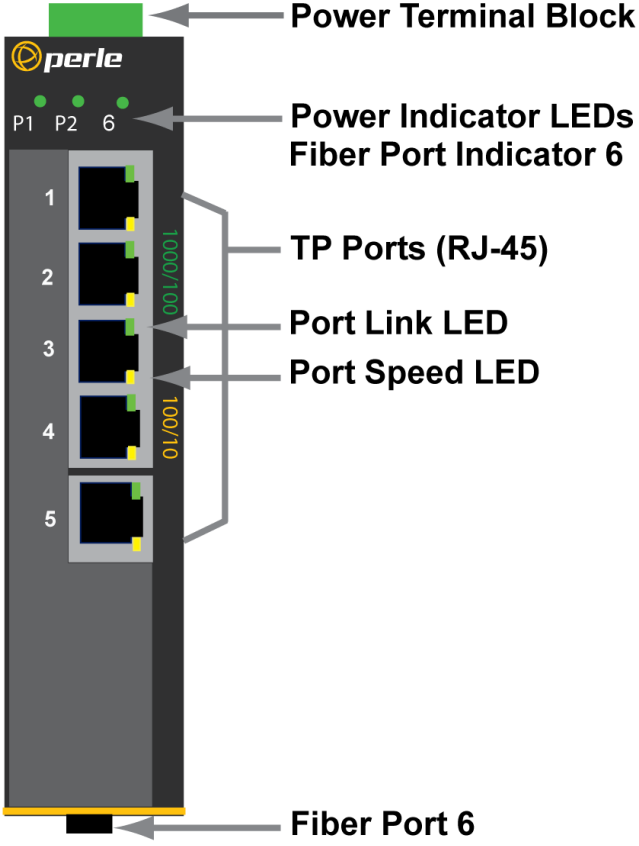
Front View of IDS-105G (5 port RJ-45)



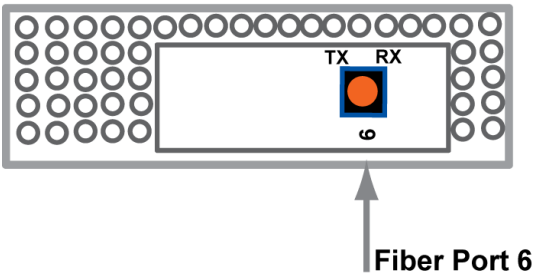
Front View of IDS-105G (with two SFP transceiver ports)



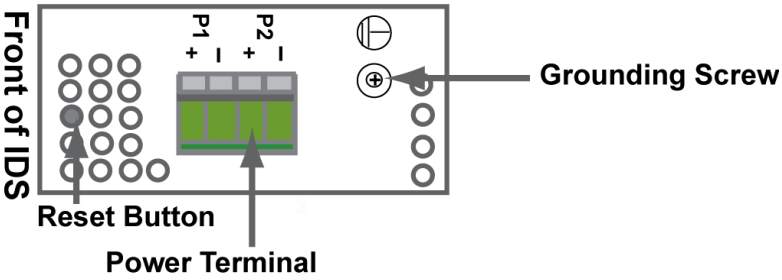
Front View of IDS-105G (with fiber port)



Bottom view of the IDS-105G (with fiber port)



Top view of the IDS-105G



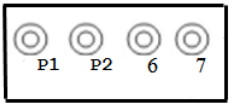
Power

The IDS-105G switch has two power inputs that can be connected simultaneously to DC or AC power sources. See ***Top view of the IDS-105G*** for location. If one power source fails, the other acts as a backup, and automatically powers the switch. See ***Connecting Power to the IDS-105G*** for information on how to connect power.

Reset Button

To reset the IDS-105G insert a paper clip into the air hole vent (see ***Top view of the IDS-105G*** for location) and gently press the reset button. The LEDs on the IDS-108F will go On and then momentarily Off when released to show that the unit has been reset. All links will be dropped and the MAC tables will be cleared.

LED Status



P1 / P2– Power (Green LED)

On: Power present
Off: No Power Present

6 (Port 6 – Fiber or SFP) (Green LED)

On: Link up
Flashing: Link up and Ethernet activity detected
Off: Link down

7 (Port 7 – SFP) (Green LED)

On: Link up
Flashing: Link up and Ethernet activity detected
Off: Link down

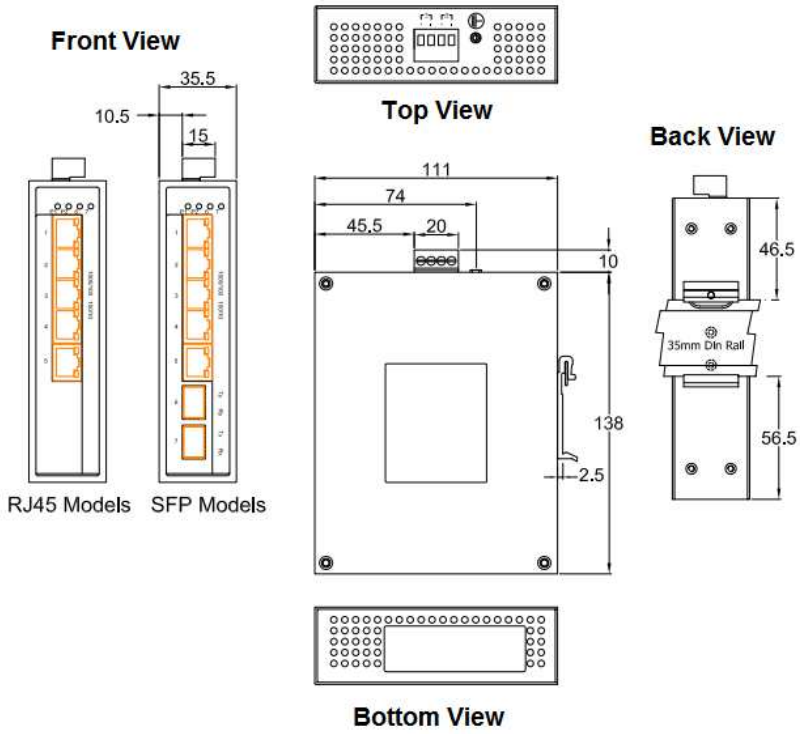
Port Link (Green and/or Yellow LED)

On: Link up
Flashing: Link up and Ethernet activity detected
Off: Link Down

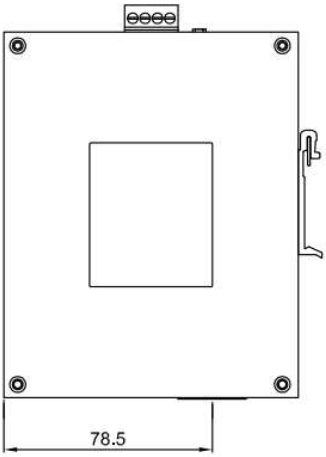
Port Speed (Green and Yellow LED)

1000 Mbps:Green On; Yellow Off
100 Mbps:Green On; Yellow On
10 Mbps:Green Off; Yellow On

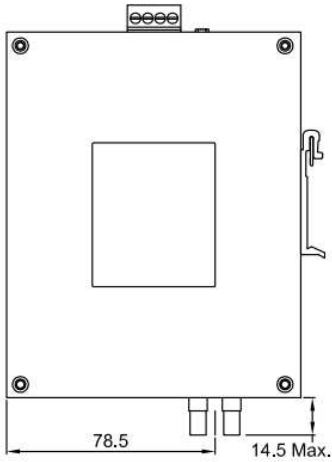
Views for the IDS-105G



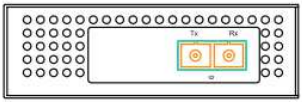
Note: all dimensions are in mm

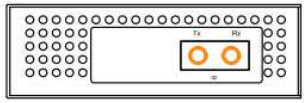


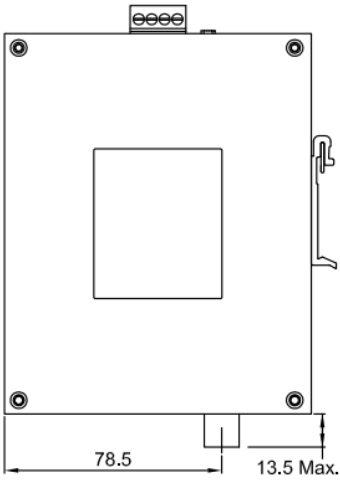
SC Models



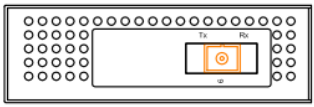
ST Models







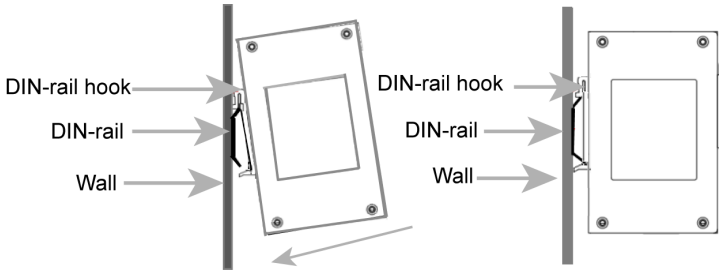
Single Fiber Models



Note: all dimensions are in mm

Mounting the IDS-105G on a DIN-rail

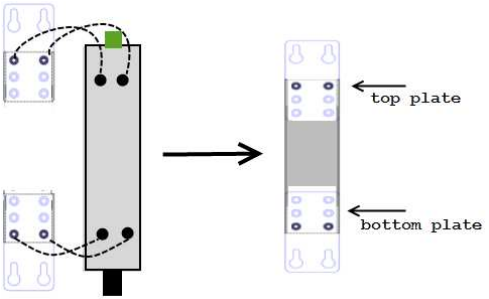
1. The DIN-rail clip will be fixed to the back panel of the IDS-105G switch when you receive the product.
2. Position the IDS-105G switch such that the top of the DIN-rail fits into the slot on the top of the DIN-rail clip, just below the hook and behind the spring.
3. While pushing down on the unit to compress the spring rotate the bottom of the IDS-105G toward the rail. This will snap the bottom of the rail into the bottom of the clip. See diagram below.



Note: To remove the IDS-105G switch from the DIN-rail, push down slightly on the IDS-105G while pulling the bottom out.

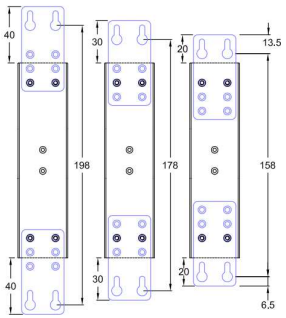
Mounting the IDS-105G to the Wall

1. Remove the DIN-rail clip from the rear panel on the IDS-105G.
2. Attach the wall mount plates to the IDS-105G switch as shown below using the screws provided in the kit.



3. Use the wall mount plates as a guide to mark the spots where the screws will be.
4. Drive the screws into the wall leaving about 2 mm of the screw protruding from the wall to allow room for sliding the wall mount panel between the wall and the screws.
5. Once the screws are fixed to the wall, insert the four screw heads through the large parts of the keyhole shaped screw openings.
6. Pull the IDS down to lock the IDS-105G to the wall mount.
7. Tighten the four screws securely to the wall.

Note: For the best results use screws that have the following attributes:
Head diameter .5 - .6 mm
Shaft diameter 3 - 3.5 mm



Note: the dimensions are in mm

Wiring up the IDS-105G

Power sources must be off prior to beginning the power connection steps.

Ensure that the voltage and current ratings of the intended power source are appropriate for the IDS-105G as indicated on the product label.

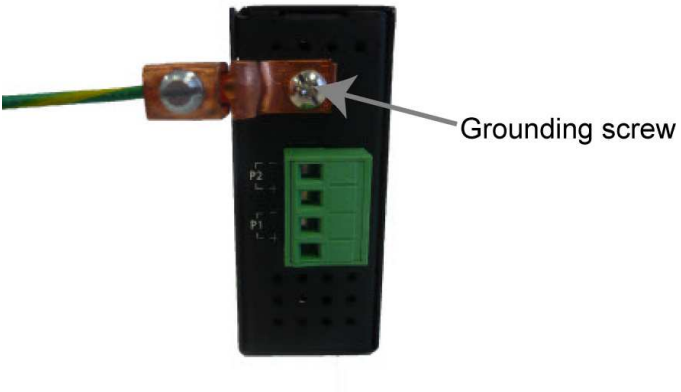
Ensure that the installation and electrical wiring of the equipment is performed by trained and qualified personnel and that the installation complies with all local and national electrical codes.

If this unit is to be installed in a location where the ambient temperature exceeds 50C, the case temperature may exceed safe levels. For this reason, this unit should be installed in a restricted access location where access can only be gained by service personnel or users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and access is through the use of a tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.

Connecting the IDS-105G to ground

If your installation requires additional grounding follow this procedure.

1. Follow the manufacturer's instructions for attaching the ground wire to grounding lug.
2. Attach the grounding lug to the chassis and secure with the grounding screw provided.



Grounding the chassis requires the following items:

- One grounding lug (not provided)
- One 18-12 AWG wire (not provided)

Connecting Power to the IDS-105G

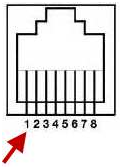
1. Ensure the power source is off prior to connection.
2. Strip both wires 5 mm (3/16th inch).
3. Loosen the terminal block screws and connect positive (+) / negative (-) wires into the -/+ terminals.
4. Tighten terminals screws (0.22Nm-0.25Nm torque).
5. Ensure the wires are securely fastened.
6. Re-insert the Terminal block connector if removed.
7. Turn on power source.
8. Check that the P1 LED is On.
9. If desired connect P2 (power source 2, beginning at Step 1).

Ethernet Copper Cabling Requirements

- Category 5 UTP or STP
- 24-22 AWG
- Straight through or Ethernet crossover cable

Connect the copper cables from each TP port (RJ-45) on the IDS-105G switch to Ethernet-enabled devices. See below for pinouts.

8-pin RJ-45



MDI Port Pinouts

Pin	Signal
1	Tx+
2	Tx-
3	Rx+
6	Rx-

MDI-X Port Pinouts

Pin	Signal
1	Rx+
2	Rx-
3	Tx+
6	Tx-

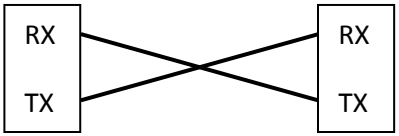
Remaining pins not used.

Fiber Port Cabling Requirements

MM: 50/125 microns or 62.5/125 microns

SM: 9/125 microns

Connect the fiber cables to Port 6/7 on the IDS-105G and the other end to a compliant fiber devices. If you are making your own fiber cables, remember that the RX on one side needs to go to TX on the other side and vice versa. See diagram below.



Technical Specifications

Connection	
Dual input terminal block power	Power Input/Consumption 9.6 to 60 VDC, 1.25Amax 18 to 30 VAC, 0.67A max
Reverse Polarity Protection	Yes
Interface	
RJ-45	10/100/1000Base-T, auto negotiation speed, F/H duplex mode and auto MDI/MDI-X connection
Fiber Ports	1000Base-X (SC or ST connectors)
SFP transceiver ports	One or two transceiver ports (depending on model) for 1000Base-X SFP's
LED indicators	P1 – power 1 P2 – power 2 Ports 1 – 8 G/Y –Link/Activity/Speed Port 6 – port status (Fiber or SFP models) Port 7 – port status (SFP models)
Environmental	
Operating Temperature Commercial Models Industrial Models	 0°C to 60°C (32°F to 140°F) -40°C to 75°C (-40°F to 167°F)
Storage Temperature Commercial Models Industrial Models	 -25°C to 70°C (-13°F to 158°F) -40°C to 85°C (-40°F to 185°F)
Operating Humidity	5% to 90% non-condensing
Storage Humidity	5% to 95% non-condensing
Operating Altitude	Up to 3,048 m (10,000 ft)
Regulatory Approvals	
Safety	cUL 60950-1, EN 60950-1
Industrial	UL 508
Hazardous Locations	ANSI/ISA 12.12.01-20xx Class I Division 2 Groups A-D - Pending ATEX Class I Zone 2 - Pending
Laser Safety	Transmitters: EN60825-1:2007 FDA/CDRH 21 CFR1040.11/CFR1040.11
EMI/EMC	FCC Part 15 – Class B CISPR22 / EN55022 Class B EN55024 Class B

Fiber Specifications

IDS-105G models	Fiber Connector	SFP transceiver ports	Mode	Distance	Wavelength (nm)	TX Power (dB)	RX Power (dB)	Budget
IDS-105G (XT)	None		n/a	n/a	n/a	n/a	n/a	n/a
IDS-105G-SFP* (XT)	None	one	-	-	-	-	-	-
IDS-105G-DSFP* (XT)	None	two	-	-	-	-	-	-
IDS-105G-M2SC05 (XT)	SC	None	MM duplex	550 m 1804 ft	TX: 850 RX:850	Min:-9.5 Max:-4	Min:-17 Max:-3	7.5
IDS-105G-M2ST05 (XT)	ST	None	MM duplex	550 m 1804 ft	TX: 850 RX:850	Min:-9.5 Max:-4	Min:-17 Max:-3	7.5
IDS-105G-M2SC2	SC	None	MM duplex	2 km 1.2 miles	TX: 1310 RX:1310	Min:-6 Max:0	Min:-17 Max:-3	11
IDS-105G-M2ST2	ST	None	MM duplex	2 km 1.2 miles	TX: 1310 RX:1310	Min:-6 Max:0	Min:-17 Max:-3	11
IDS-105G-S2SC10 (XT)	SC	None	SM duplex	10 km 6.2 miles	TX: 1310 RX:1310	Min:-9.5 Max:-3	Min:-20 Max:-3	10.5
IDS-105G-S2ST10 (XT)	ST	None	SM duplex	10 km 6.2 miles	TX: 1310 RX:1310	Min:-9.5 Max:-3	Min:-20 Max:-3	10.5
IDS-105G-S1SC10U-XT	SC	None	SM duplex	10 km 6.2 miles	TX: 1310 RX:1490	Min:-9 Max:-3	Min:-20 Max:-3	11
IDS-105G-S1SC10D-XT	SC	None	SM duplex	10 km 6.2 miles	TX: 1490 RX:1310	Min:-9 Max:-3	Min:-20 Max:-3	11
IDS-105G-S1SC20U	SC	None	SM duplex	20 km 12.4 miles	TX: 1310 RX1490	Min:-8 Max:-3	Min:-22 Max:-3	14
IDS-105G-S1SC20D	SC	None	SM duplex	20 km 12.4 miles	TX: 1490 RX:1310	Min:-8 Max:-3	Min:-22 Max:-3	14

IDS-105G-S2SC40	SC	None	SM duplex	40 km 24.9 miles	TX: 1310 RX:1310	Min:-3 Max:-5	Min:-23 Max:-3	20
IDS-105G-S2ST40	ST	None	SM duplex	40 km 24.9 miles	TX: 1310 RX:1310	Min:-3 Max:-5	Min:-23 Max:-3	20
IDS-105G-S1SC40U	SC	None	SM duplex	40 km 24.9 miles	TX: 1310 RX:1490	Min:-3 Max:-2	Min:-23 Max:-3	20
IDS-105G-S1SC40D	SC	None	SM duplex	40 km 24.9 miles	TX: 1490 RX:1310	Min:-3 Max:-2	Min:-23 Max:-3	20
IDS-105G-S2SC70	SC	None	SM duplex	70 km 43.5 miles	TX: 1550 RX:1550	Min:-2 Max:5	Min:-23 Max:-3	21
IDS-105G-S2ST70	ST	None	SM duplex	70 km 43.5 miles	TX: 1550 RX:1550	Min:-2 Max:5	Min:-23 Max:-3	21
IDS-105G-S1SC80U	ST	None	SM simplex	80 km 49.7 miles	TX: 1510 RX:1590	Min:-2 Max:3	Min:-26 Max:-3	24
IDS-105G-S1ST80D	ST	None	SM simplex	80 km 49.7 miles	TX: 1590 RX:1510	Min:-2 Max:3	Min:-26 Max:-3	24
IDS-105G-S2SC120	SC	None	SM duplex	120 km 74.6 miles	TX: 1550 RX:1550	Min:0 Max:5	Min:-32 Max:-9	32
IDS-105G-S1SC120U	SC	None	SM simplex	120 km 74.6 miles	TX: 1510 RX:1590	Min:-2 Max:3	Min:-26 Max:-3	24
IDS-105G-S1SC120D	ST	None	SM simplex	120 km 74.6 miles	TX: 1590 RX:1510	Min:-2 Max:3	Min:-26 Max:-3	24
IDS-105G-S2SC160	SC	None	SM duplex	160 km 100 miles	TX: 1550 RX:1550	Min:0 Max:5	Min:-32 Max:-9	32
IDS-105G-S2ST160	ST	None	SM duplex	160 km 100 miles	TX: 1550 RX:1550	Min:0 Max:5	Min:-32 Max:-9	32

**** fiber characteristics are determined by the SFP inserted***

Contacting Technical Support

Contact information for the Perle Technical Assistance Center (PTAC) can be found at the link below. A Technical Support Query may be made via this web page.

www.perle.com/support_services/support_request.shtml

Warranty / Registration

This product is covered by the Perle Ethernet Switches Warranty. Details can be found at:

http://www.perle.com/support_services/warranty.shtml

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